

Figure 1

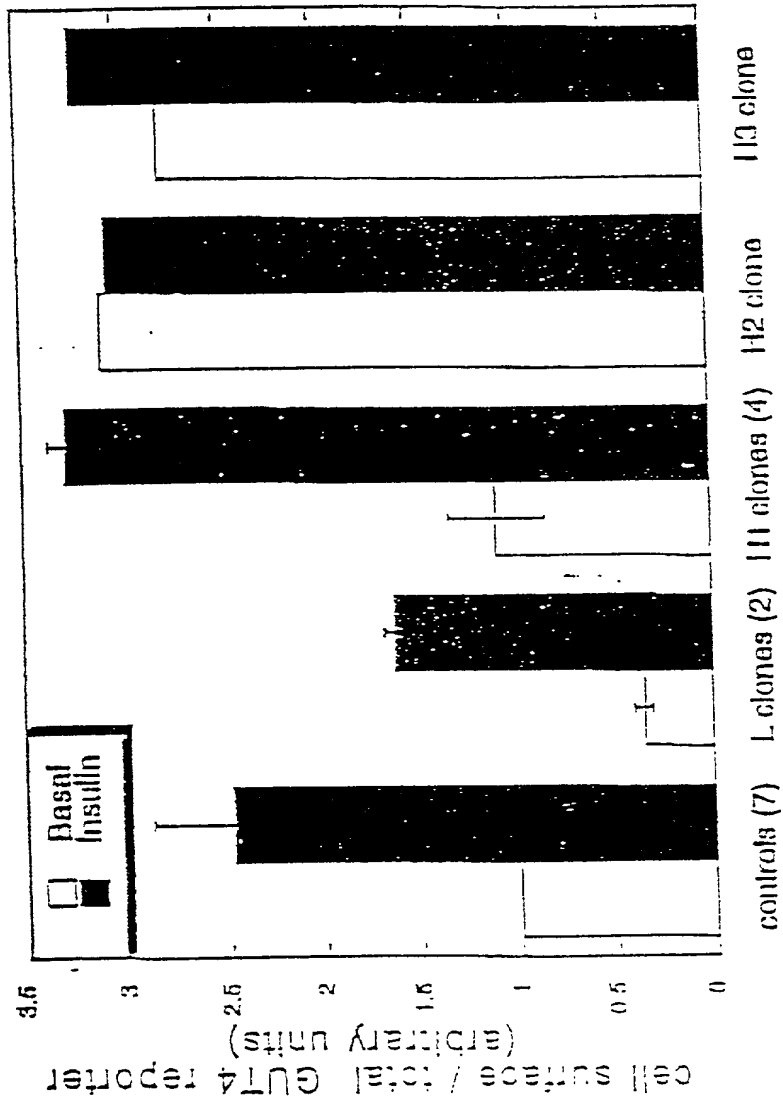


Figure 2

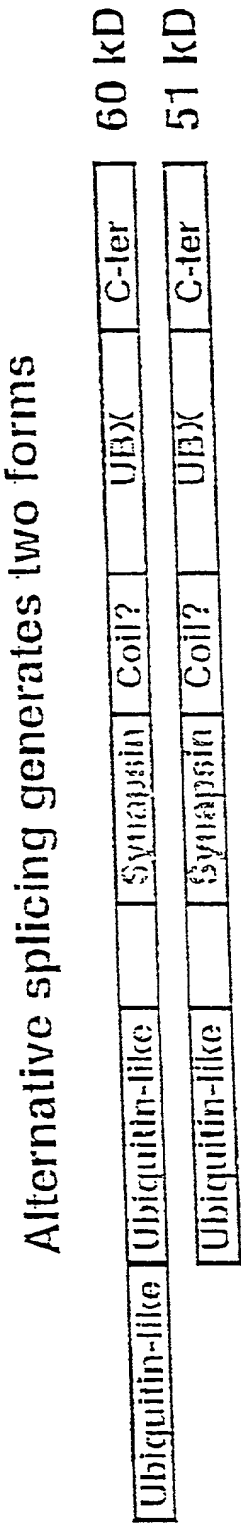


Figure 3

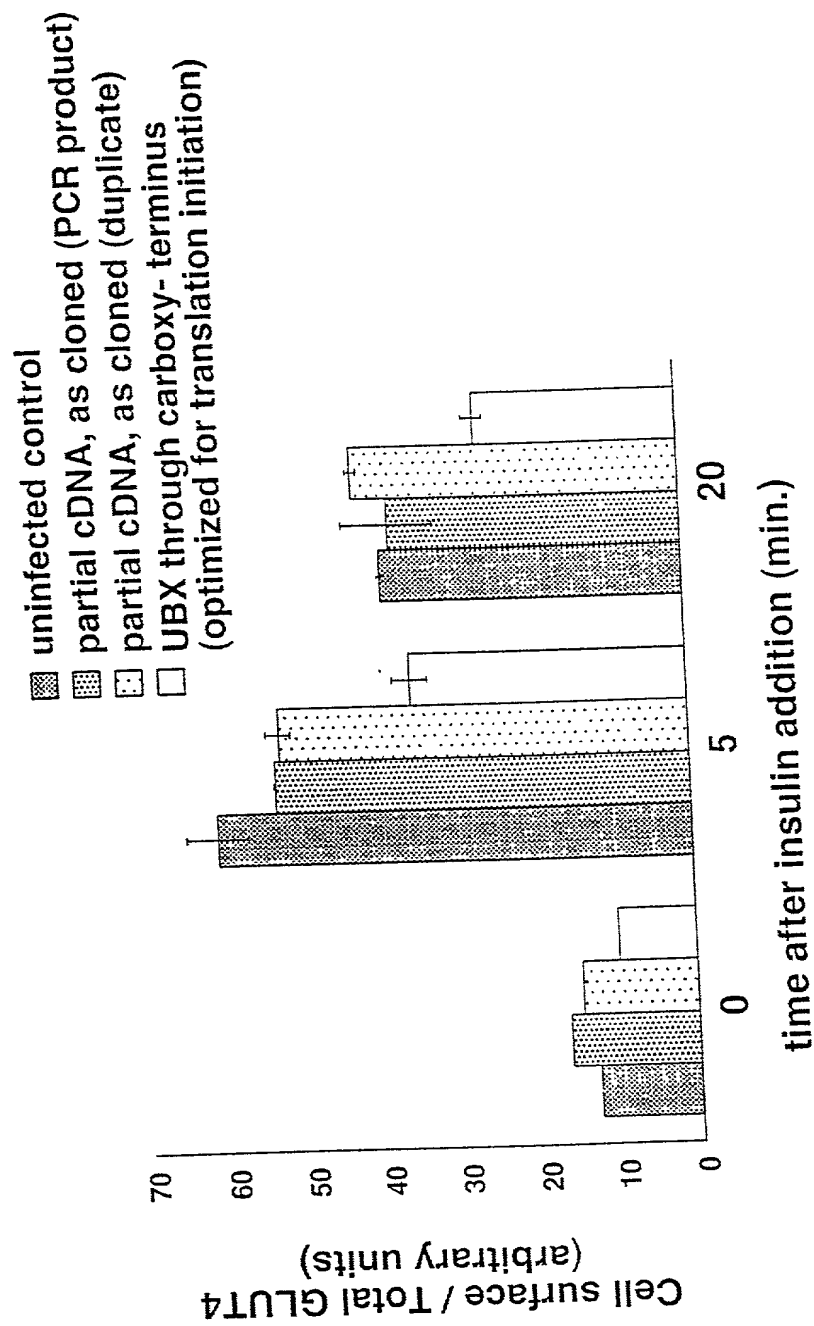


Figure 4

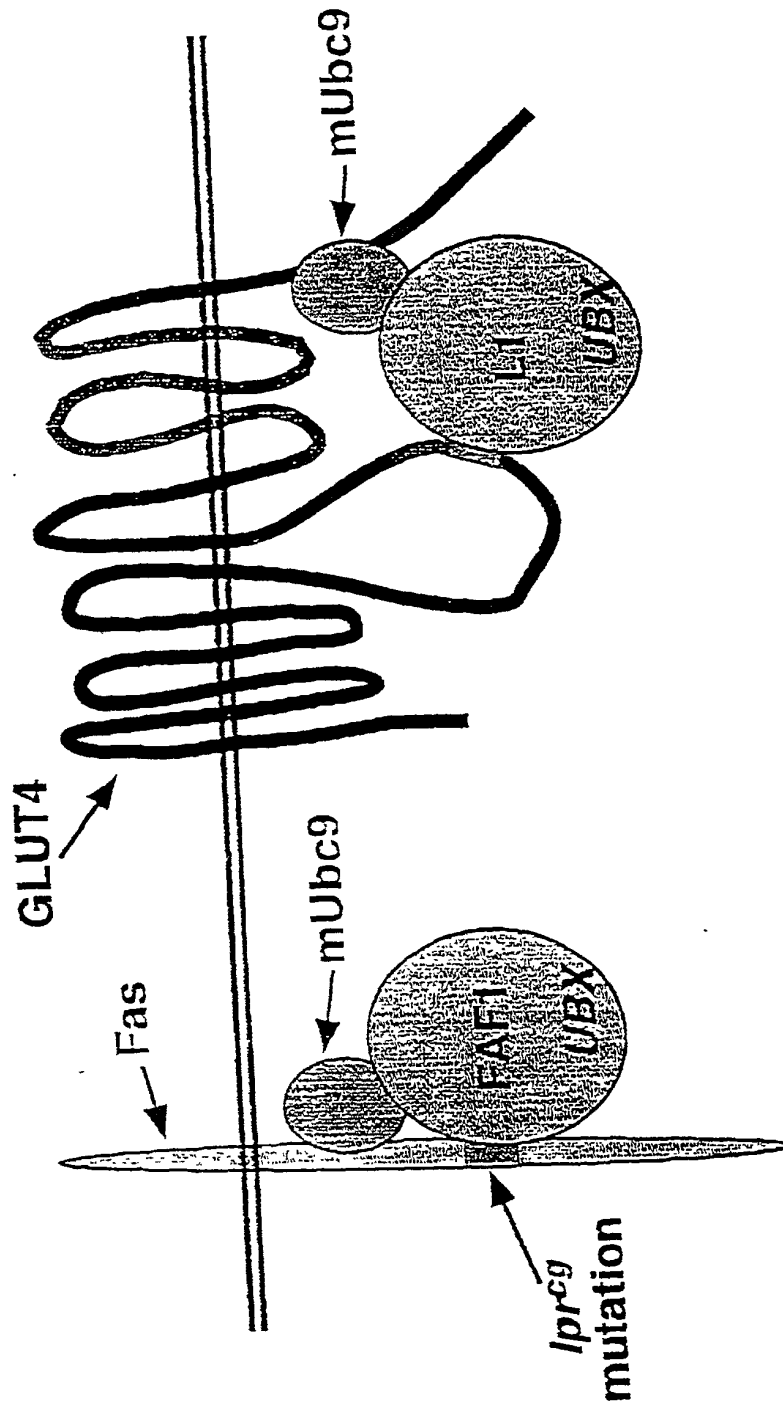


Figure 5

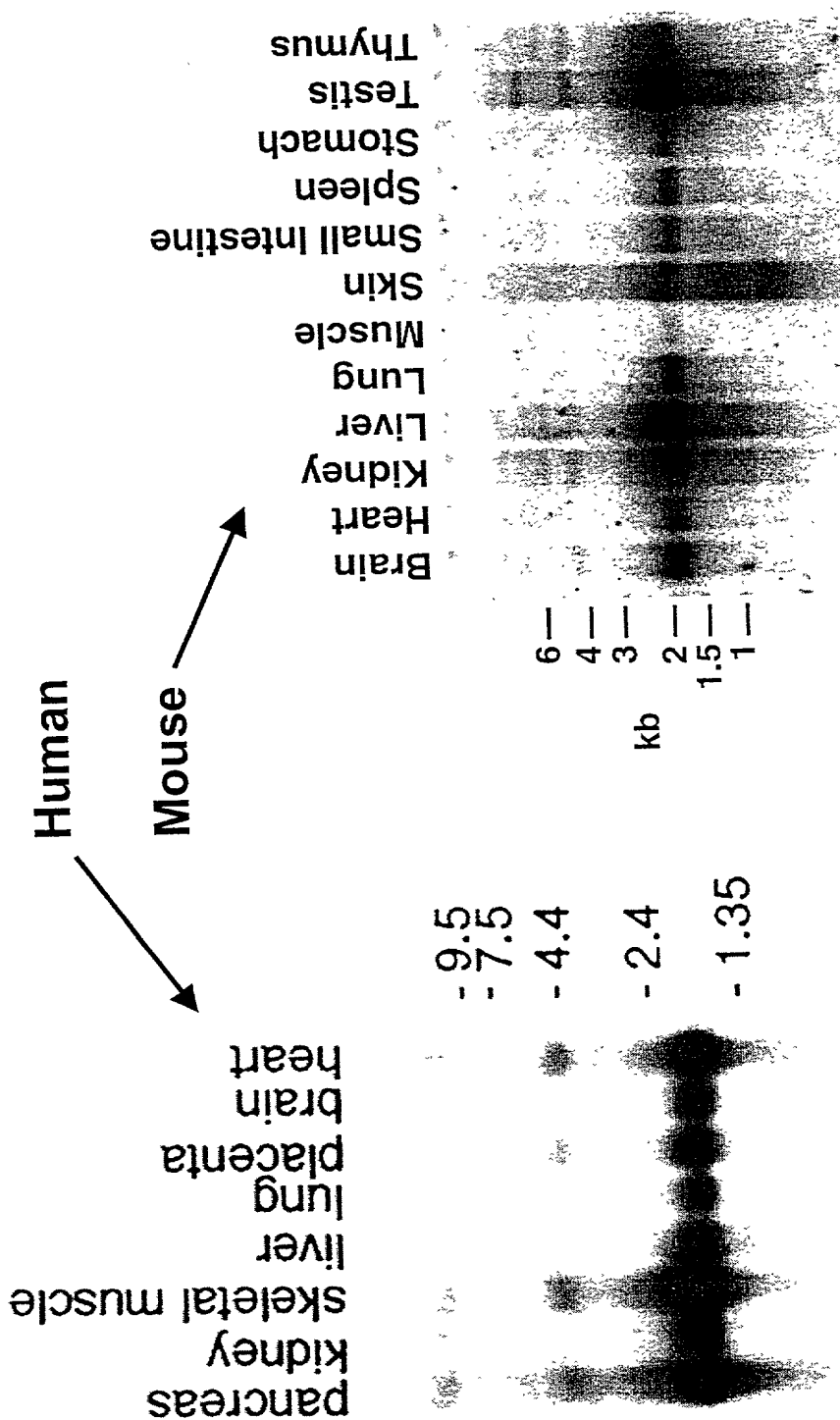


Figure 6B

Figure 6A

20250210-02883001

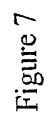


Figure 7

mmL1 long splice variant:

MAAPAGGGGSAVSVLAPNGRRHTVKVTPSTVLLQVLEDTCRRQDFNPSEY  
DLKFQRTVLDLSLQWRFANLPNNAKLEMVPVSRREGPENIVRIAFQLDD  
GSRLQDAFCSRQTLWELLSHFAQTRERLQQLGEKTPVCVYMRNEVTGRAA  
LQNTTLQSLGLTGGSATIRFVIKQCDTAGKQESIIVRSKAPGSPVSSLSA  
DQASSSTLLPLNSGEFSRGDLNHEGDANTS GTGLEGGPKPTDAQTKQSTS  
EPASAPFVPFSGGGQRLGGPSASLRPLTSPSANSSKSFSGPGGSPSKPKP  
KPGEEPQQEPEPPVDRDPVVYHPDLEDLLQPWPAEVPDEFFEVTVDDVRR  
RLAQLKSERKRLEEAPLVTKAFREAQMKEKLERYPKVALRVLPDRYILQ  
GFFRPSETVGDRLDFVRSHLGNPELSFYLFIAAPPKMVLDDHTLTTLFQANL  
FPAALVHFGAEPTGLYLEPGLLEHTVSPSTADVLVARCMSRASGSPPLL  
PAPDPVSLESEPIAEDGALGPPEPIQGTAPVKRSLGKVPKWLKLPASKR

\*

Figure 8A

mmL1 short splice variant:

MVPVSRREGPENIVRIAFQLDDGSRLQDAFCSRQTLWELLSHFAQTRER  
LQQLGEKTPVCVYMRNEVTGRAALQNTTLQSLGLTGGSATIRFVIKQCDT  
AGKQESIIVRSKAPGSPVSSLSADQASSSTLLPLNSGEFSRGDLNHEGDA  
NTSGTGLEGGPKPTDAQTKQSTSEPASAPFVPFSGGGQRLGGPSASLRPL  
TSPSANSSKSFSGPGGSPSKPKPKPGEEPQQEPEPPVDRDPVVYHPDLED  
LLQPWPAEVPDEFFEVTVDDVRRRLAQLKSERKRLEEAPLVTKAFREAQM  
KEKLERYPKVALRVLPDRYILQGGFRPSETVGDRLDFVRSHLGNPELSF  
YLFIAAPPKMVLDDHTLTTLFQANLFPALVHFGAEPTGLYLEPGLLEHTV  
SPSTADVLVARCMSRASGSPPLLAPDPVSLESEPIAEDGALGPPEPIQGT  
APVKRSLGKVPKWLKLPASKR\*

Figure 8B

hsL1 long splice variant:

MAAPAGGGGSAVSVLAPNGRRHTVKVTPSTVLLQVLEDTCRRQDFNPCEY  
DLKFQRSVLDLSLQWRFANLPNNAKLEMVPASRSREGPENMVRIALQLDD  
GSRLQDSFCSGQTLWELLSHFPQIRECLQHPGGATPVCVYTRDEVTEGAA  
LRGTTLQSLGLTGGSATIRFVMKCYDPVGKTPGSLGSSASAGQAAASAPL  
PLESGELSRGDLSPEDADTSGPCCEHTQEKQSTRAPAAAPFVPFSGGGQ  
RLGGPPGPTRPLTSSSAKLPKSLSSPGGSPSKPKSKSGQDPQQEQEQERE  
RDPQQEQERERPVDPREPVDREPVDVCHPDLEERLQAWPAELPDEFFELTV  
DVRRLAQLKSERKRLEEAPLVTKAFREAQIKEKLERYPKVALRVLPDR  
YVLQGGFRPSETVGDRLDFVRSHLGNPELSFYLFITPPKTVLDDHTQT  
LFQANLFPALVHLGAEPAAGVYLEPGLLEHAISPSAADVLVARYMSRAAGS  
PSPLPAPDPAPKSEPAEEGALVPPEPIPGTAQVKRSLGKVPKWLKLP  
ASKR\*

Figure 8C



hsL1 short splice variant:

MVPASRSREGPENMVRIALQLDDGSRLQDSFCSGQTLWELLSHFPQIREC  
LOHPGGATPVCVYTRDEVTEAALRGTTLQSLGLTGGSATIRFVMKCYDP  
VGKTPGSLGSSASAGQAAASAPLPLESGELSRGDLSPEDADTSGPCCEH  
TQEQQSTRAPAAAPFVPFSGGGQRLGGPPGPTRPLTSSSAKLPKSLSSPG  
GPSKPKKSKSGQDPQQEQEQERERDPQQEQERERPVDREPVDREPVVCHP  
DLEERLQAWPAELPDEFFELTVDDVRRRLAQLKSERKRLEEAPLVTKAFR  
EAQIKEKLERYPKVALRVLPDRYVLQGFRRPSETVGDRLRDFVRSHLGNP  
ELSFYLFITPPKTVLDDHTQTLFQANLFPAAALVHLGAEPPAGVYLEPGLL  
EHAISPSAADVLVARYMSRAAGSPSPLPAPDPAPKSEPAAEEGALVPPEP  
IPGTAQPVKRS LGKVPKWLKLPASKR\*

Figure 8D

mmL2:

MKKFFQEIKADIKFKSAGPGQKLTD SAGEKTTKGKSPQLALRQPRQGPTD  
EAQMAAAALARLEQKQPRARGPTSQDSIRNQVRKELQAEATSSNNPGAP  
GTNSVPEPKKEISPHLAVPGVFFICPLTGVTLRDQORDAHIKQAILSHFS  
TDPVAASIMKIHTFNDRDRVKLGVDTI AKYLDNIHLHPEEEKYQKIKLQ  
NKVFQERINCLEGSHEFFEAIGFKVTL PVPDQEGQEEFYVLGEDARAPQ  
NLARHKQQLLDAEPVRATLDRQLRVFRPSALASHFELPSDFFSLTAEVVK  
RDERLRTEAVERLSSLR TKAMREKEEQRDVRKYTYALVRVRLPDGCLLQ  
TFYAREKLSALFRFVREALQNDWLP FELRASGGQKLEENEALALNECGLV  
PSALLTFSWDASVLEDIRAAGAEPKSVLRPELLAAIEQLS\*

Figure 8E

hsL2:

MKKFFQEFKADIKFKSAGPGQKLKESVGEKAHKEKPNQPAPRPPRQGPTN  
EAQMAAAALARLEQKQSRWAGPTSQDTIRNQVRKELQAEATVSGSPEAP  
GTNVVSEPREEGSAHLAVPGVYFTCPLTGATLRKDQORDACIKEAILLHFS  
TDPVAASIMKIYTFNKDQDRVKLGVDTI AKYLDNIHLHPEEEKYRKIKLQ  
NKVFQERINCLEGTHEFFEAIGFQKVLLPAQDQEDPEEFYVLSETTLAQP  
QSLERHKEQLLAAEPVRAKLDRQRRVFQPSPLASQFELPGDFFNLTAEEI  
KREQRLRSEAVERLSVLRTKAMREKEEQRLRKYNITLLRVRLPDGCLLQ  
GTFYARERLGAVYGFVREALQSDWLP FELLASGGQKLS EDENLALNECGL  
VPSALLTFSWDMVLEDIKAAGAEPDSILKPELLSAIEKLL\*

Figure 8F

hsL1 short splice variant:

MVPASRSREGPENMVRIALQLDDGSRLQDSFCSGQTLWELLSHFPQIREC  
LQHPGGATPVCVYTRDEVTEAALRGTTLQSLGLTGGSATIRFVMKCYDP

Figure 8G

Figure 9A

Figure 9B

202210 02005007

```
>gi|13129078|ref|NP_076988.1| ASPL protein [Homo sapiens]
gi|12862970|gb|AAK08959.2|AF324219_1 (AF324219) ASPL [Homo sapiens]
Length = 553

Score = 720 bits (1858), Expect = 0.0
Identities = 440/569 (77%), Positives = 464/569 (81%), Gaps = 35/569 (6%)

mm Ll long Query: 1 MAAPAGGGGSAVSVLAPNGRRHTVKVTPSTVLLQVLEDCRRQDNFNPSEYDLKFKQRTVLD 60
MAAPAGGGGSAVSVLAPNGRRHTVKVTPSTVLLQVLEDCRRQDNFNP EYDLKFKQRTVLD
hs Ll long Sbjct: 1 MAAPAGGGGSAVSVLAPNGRRHTVKVTPSTVLLQVLEDCRRQDNFNPCEYDLKFKQRTVLD 60
MAAPAGGGGSAVSVLAPNGRRHTVKVTPSTVLLQVLEDCRRQDNFNPCEYDLKFKQRTVLD

Query: 61 LSLQWRFANLPNNAKLEMVPSRSREGPENIVRIAFQDDGSRQLQDAFCRSRQTLWELLSH 120
LSLQWRFANLPNNAKLEMVPSRSREGPEN+VRIA QLDDGSRQLQD+FCS QTLWELLSH
Sbjct: 61 LSLQWRFANLPNNAKLEMVPSRSREGPENIVRIALQDDGSRQLQDSFCSCQTLWELLSH 120
LSLQWRFANLPNNAKLEMVPSRSREGPENIVRIALQDDGSRQLQDSFCSCQTLWELLSH

Query: 121 FAQTRERLQQLGEKTPVCVYMRNEVTGRAALQNTTLLQSLGLTGGSATIRFVVKQCDTAGK 180
F Q RE LQ G TPVCVY R+EVTV AAL+ TTLQSLGLTGGSATIRFV+K D G
Sbjct: 121 FPQIRECLQHPGGATPVCVYTRDEVTEGAALRTTLLQSLGLTGGSATIRFVVKCYDPVG- 179
FPQIRECLQHPGGATPVCVYTRDEVTEGAALRTTLLQSLGLTGGSATIRFVVKCYDPVG-

Query: 181 QESTIAVRSKAPGSPVSSLSADQASSSTLLPLNSGEFSRGDLNHEGDANTSGTGLEGGPKP 240
K PGS SS SA QA++S LPL SGE SRGDL+ DA+TS GP
Sbjct: 180 -----KTPGSLGSSASAGQAAASAPLPLESGELSRGDLRSPEDADTS-----GPCC 225
KTPGSLGSSASAGQAAASAPLPLESGELSRGDLRSPEDADTS-----GPCC

Query: 241 TDAQTKQSTSEPASAPFVPFSGGGQRLGSPASLRPLTSPSANSKSFSGPGSPKPKPK 300
Q KQST PA+APFVPFSGGGQRLGSP RPLTS SA KS S PGGPSKPKK
Sbjct: 226 EHTQEKQSTRAPAAAPFVPFSGGGQRLGSPGPPRPLTSSAKLPKLSLSPGSPKPKKS 285
EHTQEKQSTRAPAAAPFVPFSGGGQRLGSPGPPRPLTSSAKLPKLSLSPGSPKPKKS

Query: 301 KPGE-----EPQQEPE-----PPVDRDPVVVHPDLEDLLQWPWPAEVPDEFF 341
K G+ +PQE E PVDR+PVV HPDLE+ LQ WPAE+PDEFF
Sbjct: 286 KSGQDPQQEQEQRERDPPQQEQERERPVDRPVDRPVVCHPDLEERLQWPAELPDEFF 345
KSGQDPQQEQEQRERDPPQQEQERERPVDRPVDRPVVCHPDLEERLQWPAELPDEFF

Query: 342 ETVDDVRRRLAQLKSERKRLEAPLVTKAFREAQMKELERYPKVALRVLPDRYTLQG 401
E+TVDDVRRRLAQLKSERKRLEAPLVTKAFREAQ+KEKLEYPKVALRVLPDRY+LQG
Sbjct: 346 ELTVDDVRRRLAQLKSERKRLEAPLVTKAFREAQ+KEKLEYPKVALRVLPDRYVYLQG 405
ELTVDDVRRRLAQLKSERKRLEAPLVTKAFREAQ+KEKLEYPKVALRVLPDRYVYLQG

Query: 402 FFRPSETVGDRLDFVRSHLGNPELSFYLFIAPKMVLDDHTLTFLQANLFPAAALVHFGAE 461
FFRPSETVGDRLDFVRSHLGNPELSFYLFIPK VLDDHT TLFQANLFPAAALVH GAE
Sbjct: 406 FFRPSETVGDRLDFVRSHLGNPELSFYLFITPPKTVLDDHTTLFQANLFPAAALVHFGAE 465
FFRPSETVGDRLDFVRSHLGNPELSFYLFITPPKTVLDDHTTLFQANLFPAAALVHFGAE

Query: 462 EPTGLYLEPGLLEHTVSPSTADVLVRCMSRASGPPPLPAPDPVSLSEPIAEDGALGP 521
EP G+YLEPGLLEH +SPS ADVLVAR MSRA+GSP LPAPDP +SEP AE+GAL P
Sbjct: 466 EPAGVYLEPGLLEHAISPSAADVLVARYMSRAAGSPPLPAPDP-KSEPAEEGALVP 524
EPAGVYLEPGLLEHAISPSAADVLVARYMSRAAGSPPLPAPDP-KSEPAEEGALVP

Query: 522 PEPIQGTAPVKRSLGKVPKWLKLPASKR 550
PEPI GTAQPVKRSGLGKVPKWLKLPASKR
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PEPIGTAPVKRSLGKVPKWLKLPASKR
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Figure 10

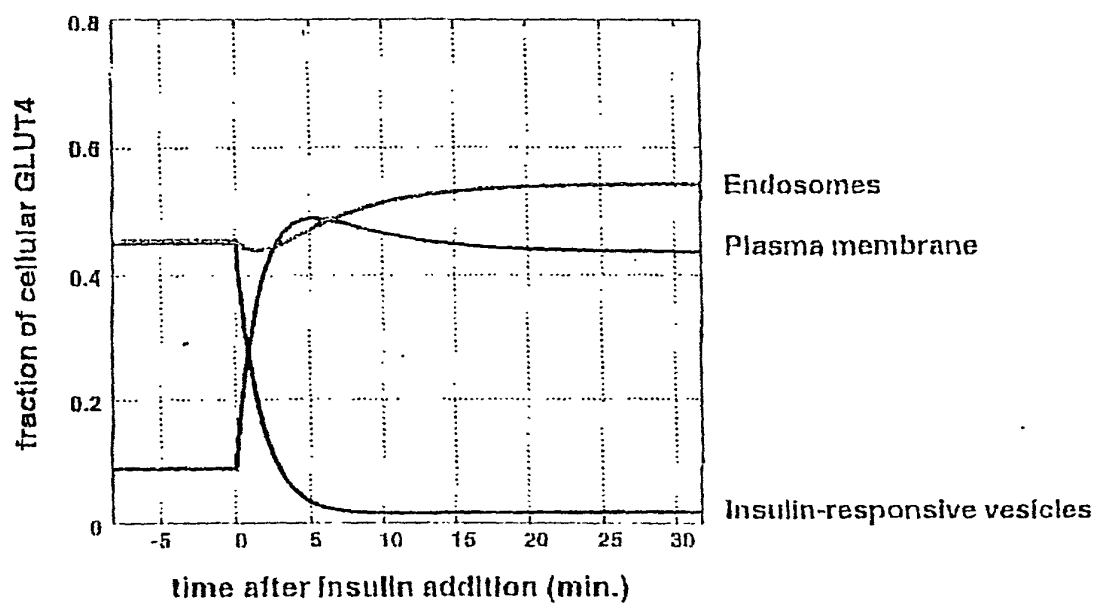


Figure 11

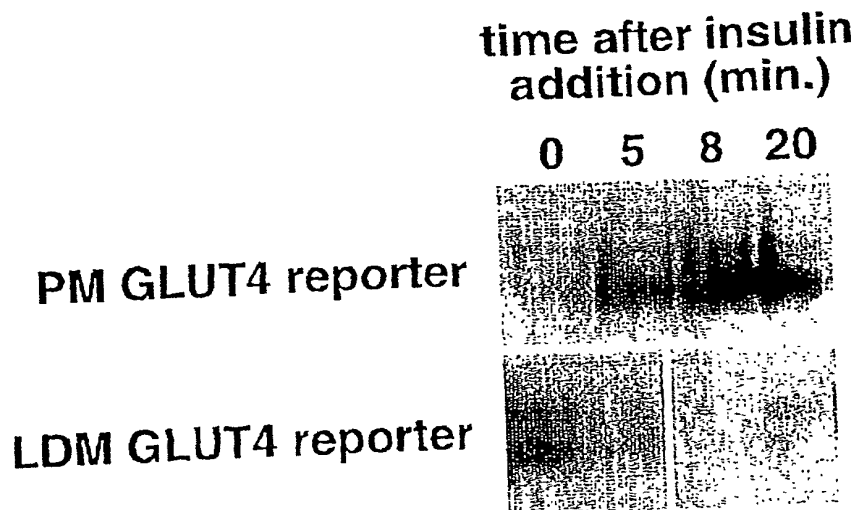


Figure 12

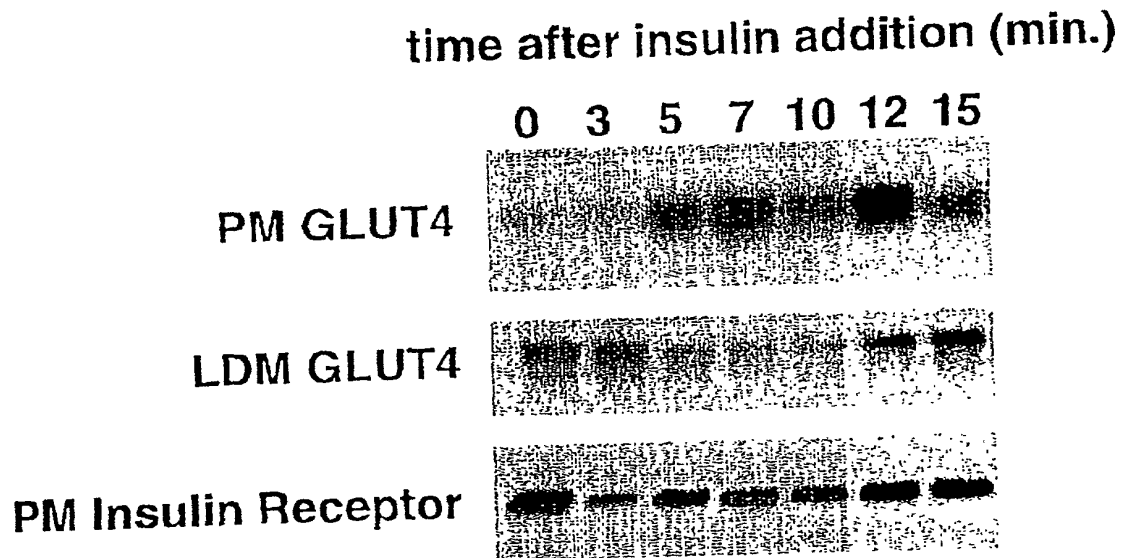


Figure 13

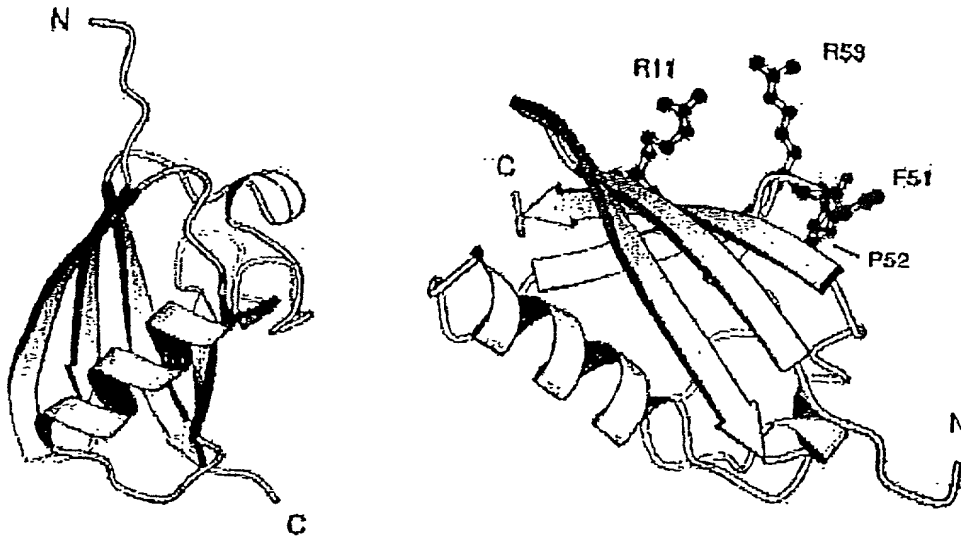


Figure 14

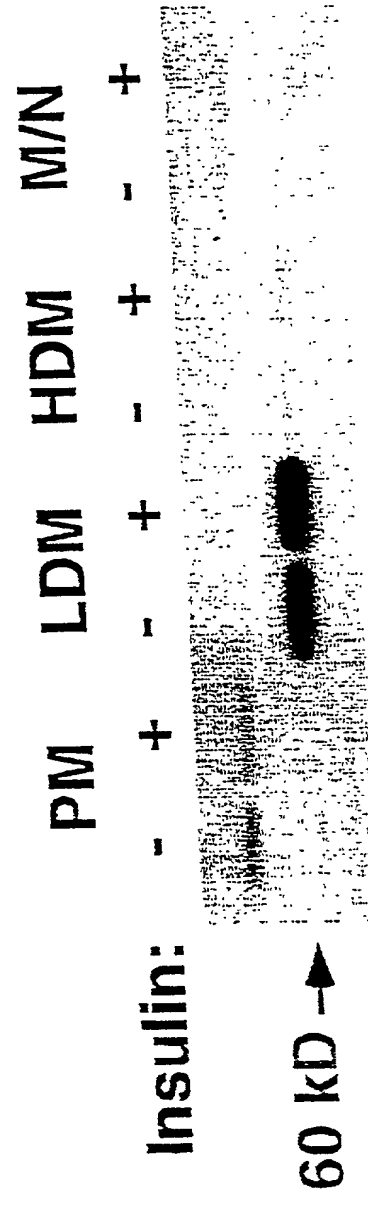


Figure 15



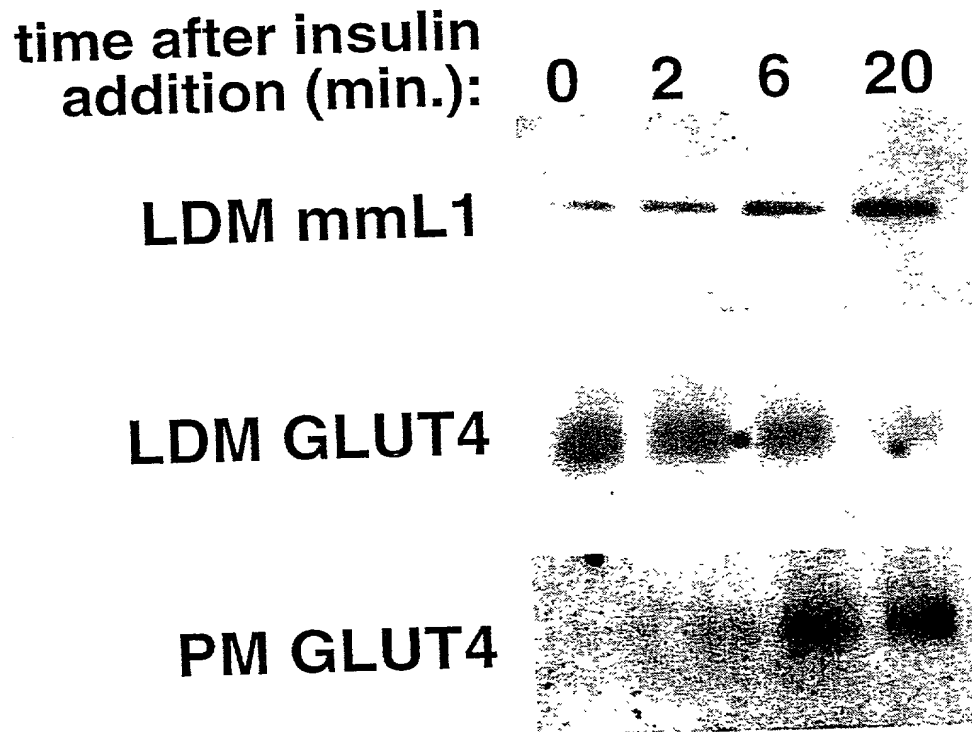


Figure 16

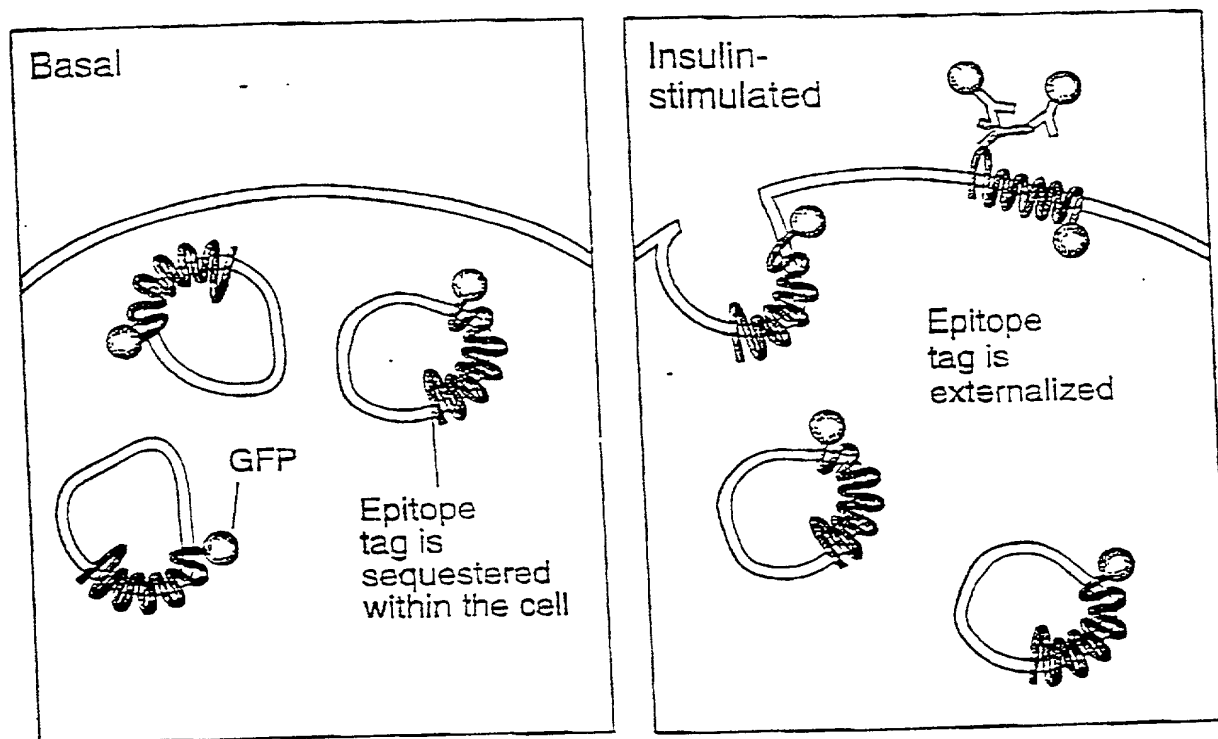


Figure 17A

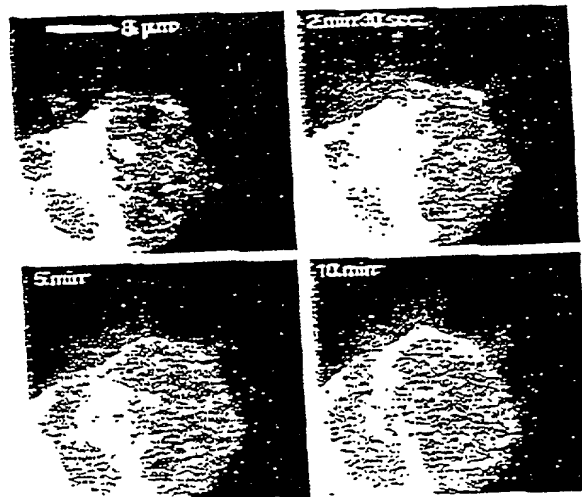


Figure 17B

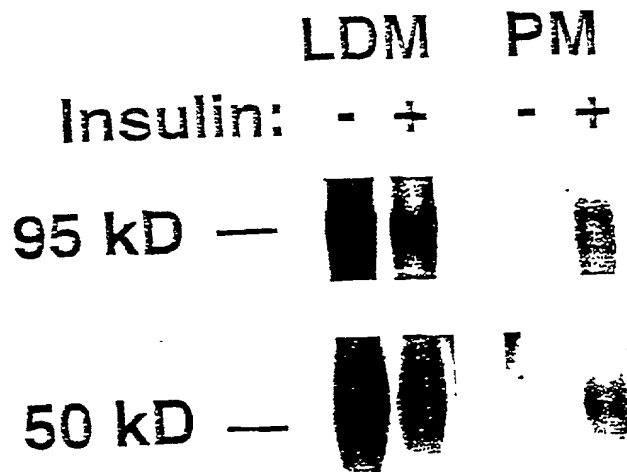


Figure 17C

10056870-018032

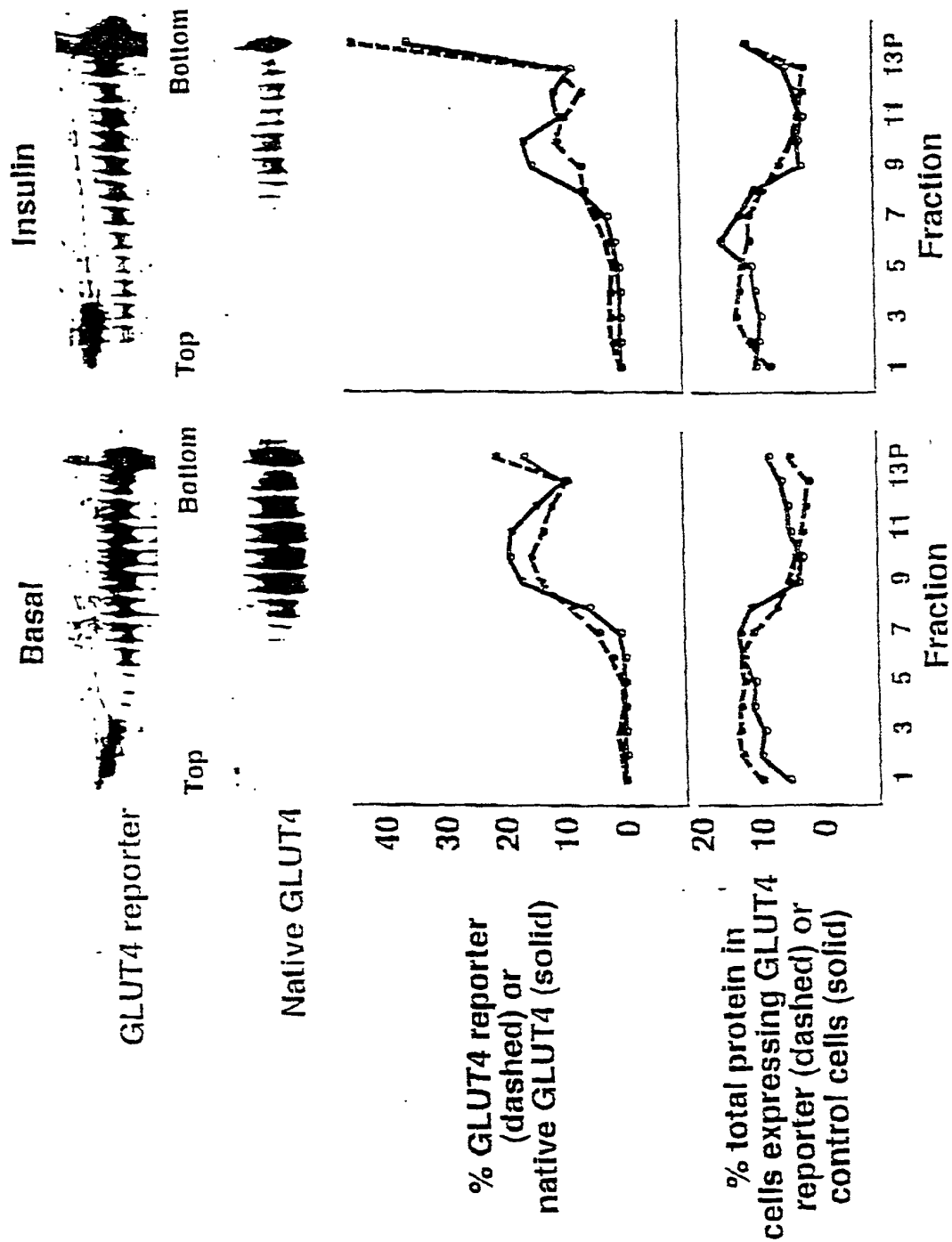


Figure 17D

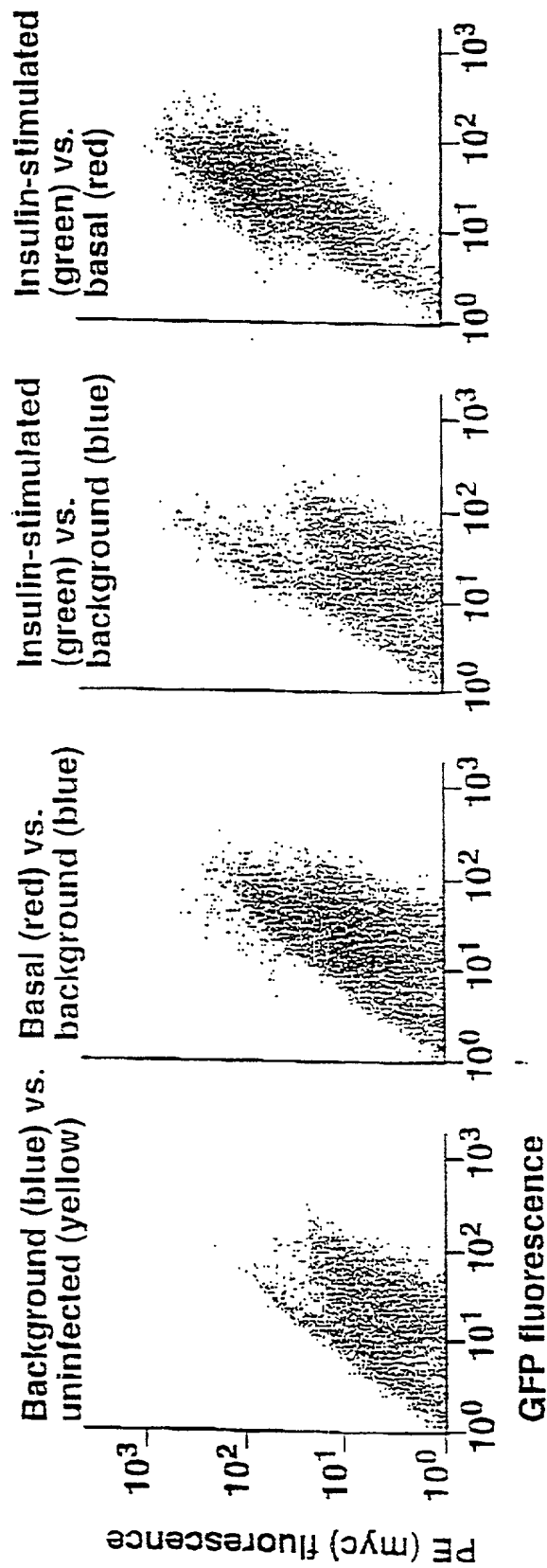


Figure 17E

20250228002

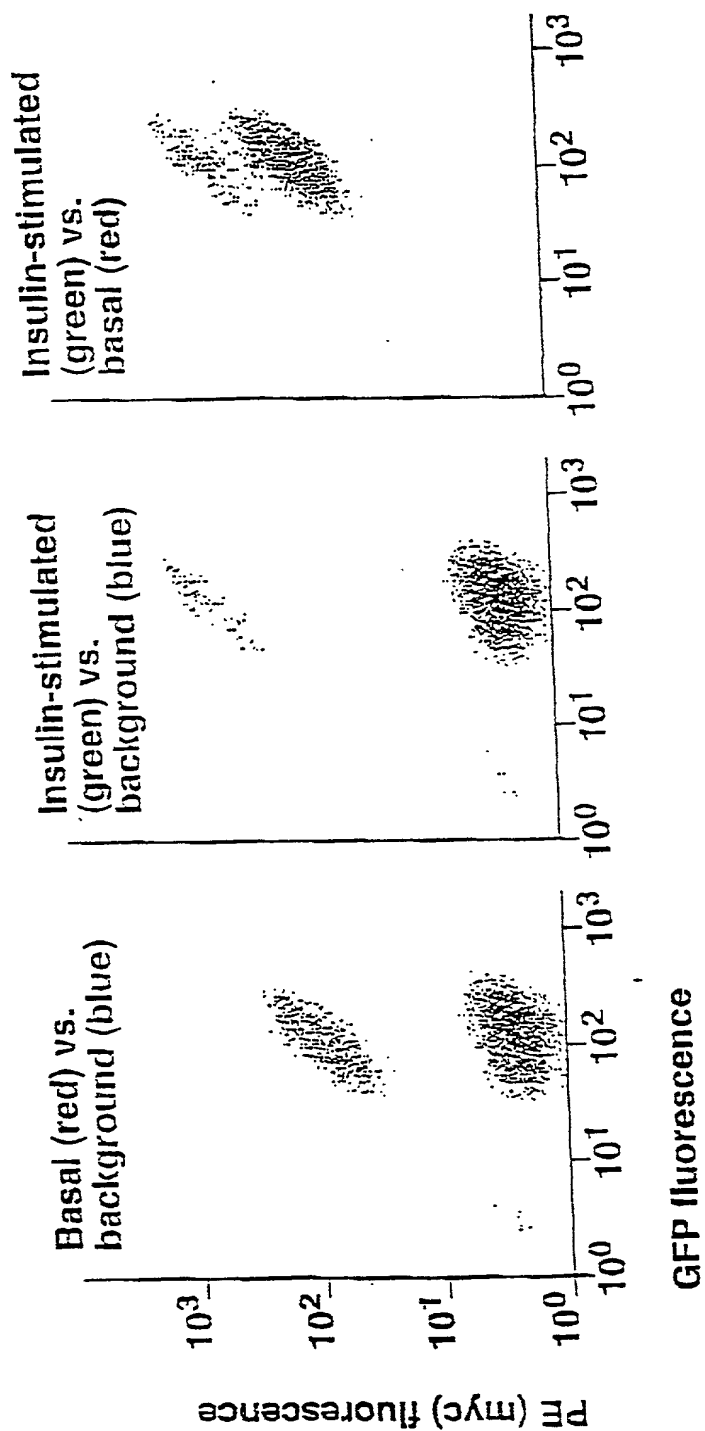


Figure 17F

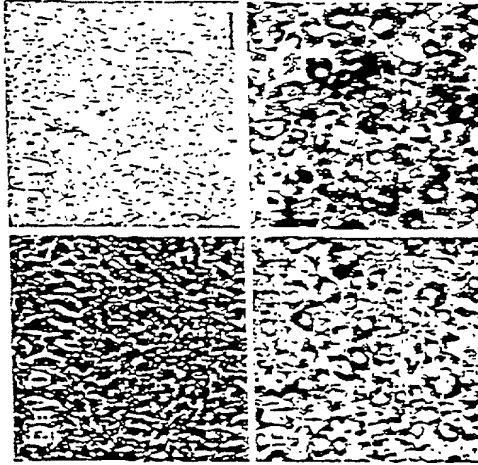


Figure 18B

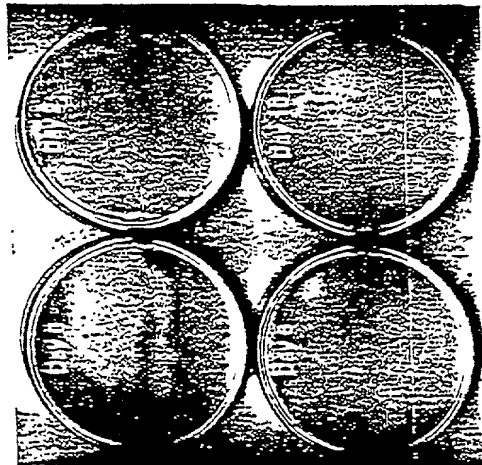


Figure 18A

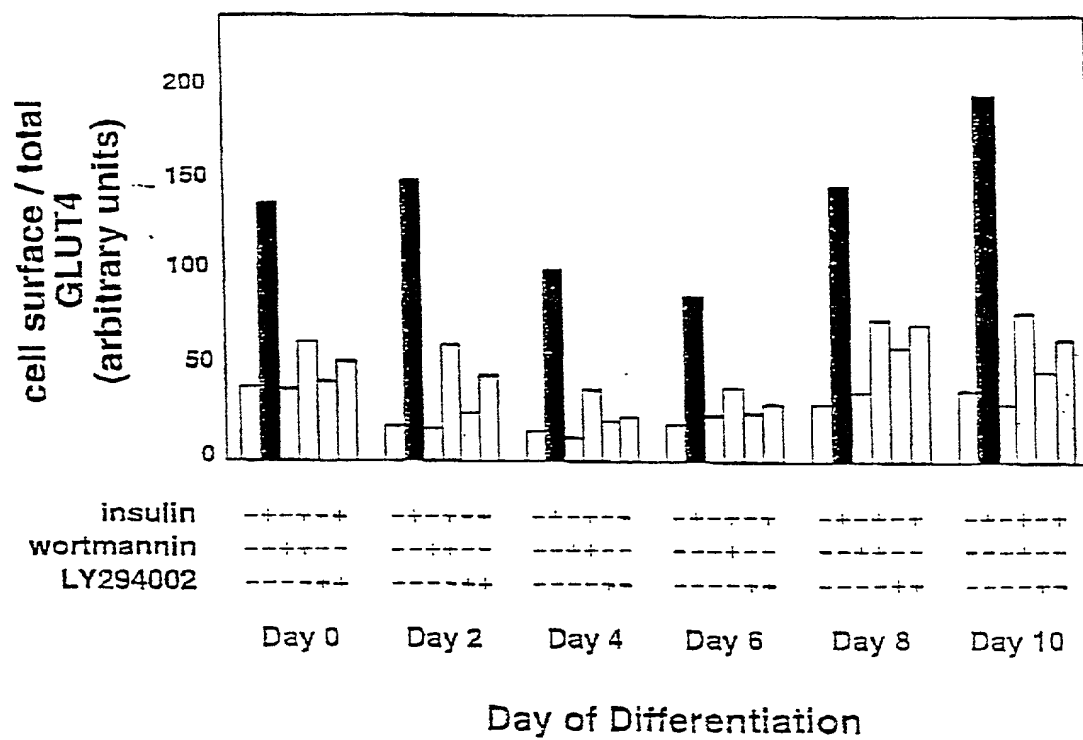


Figure 18C



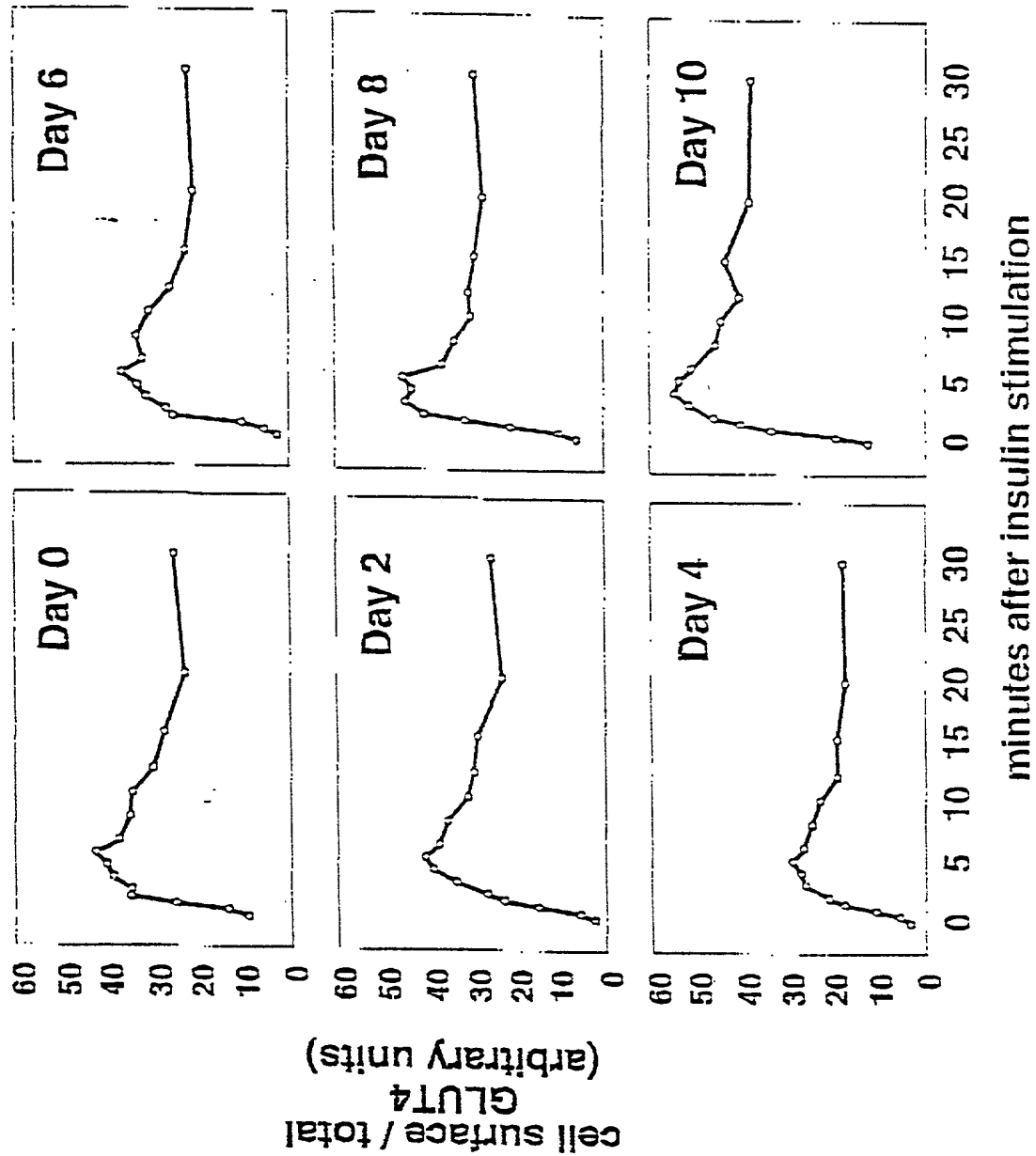


Figure 19A

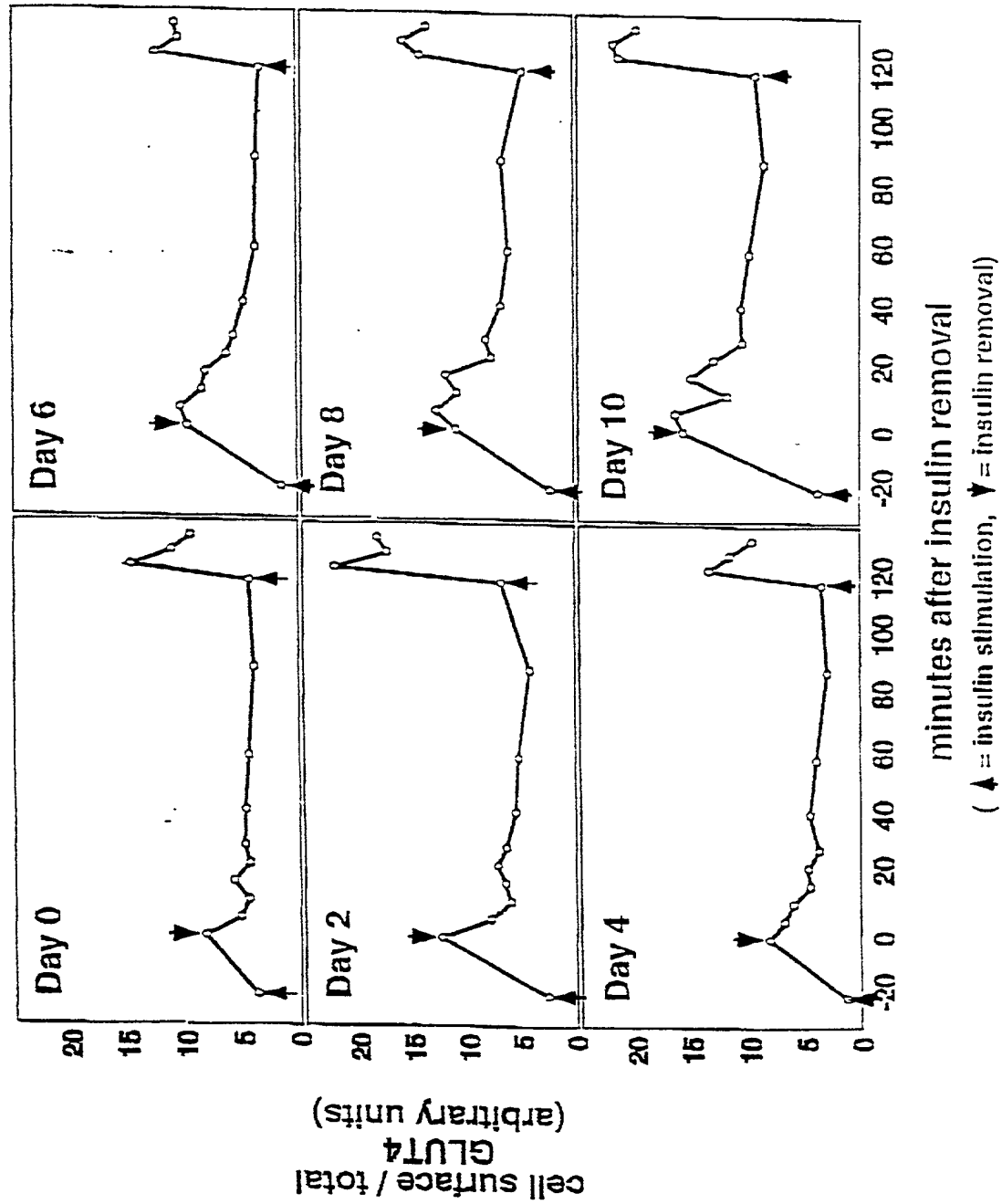


Figure 19B

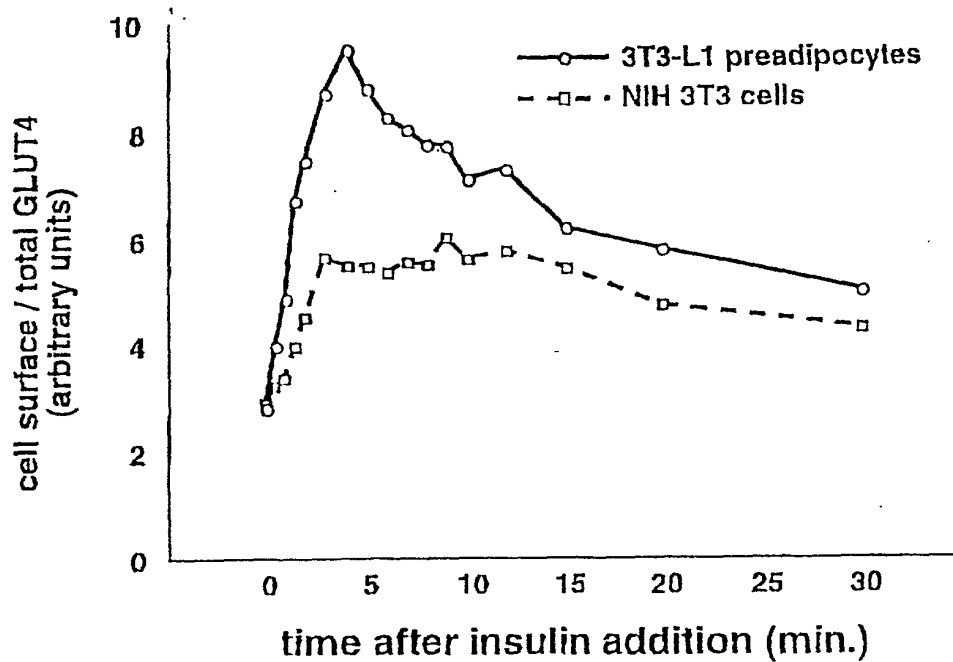


Figure 19C

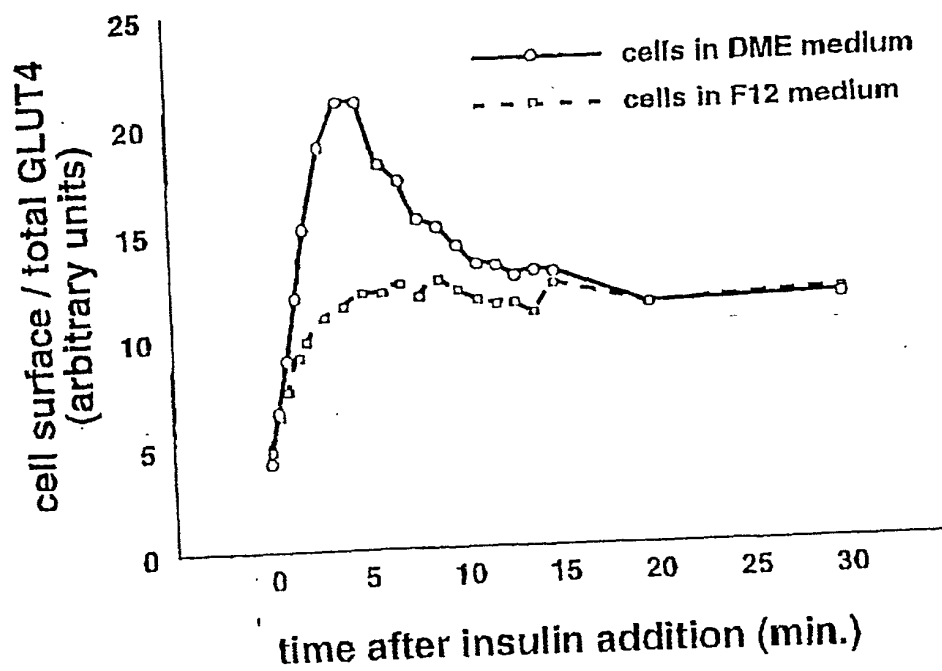


Figure 20

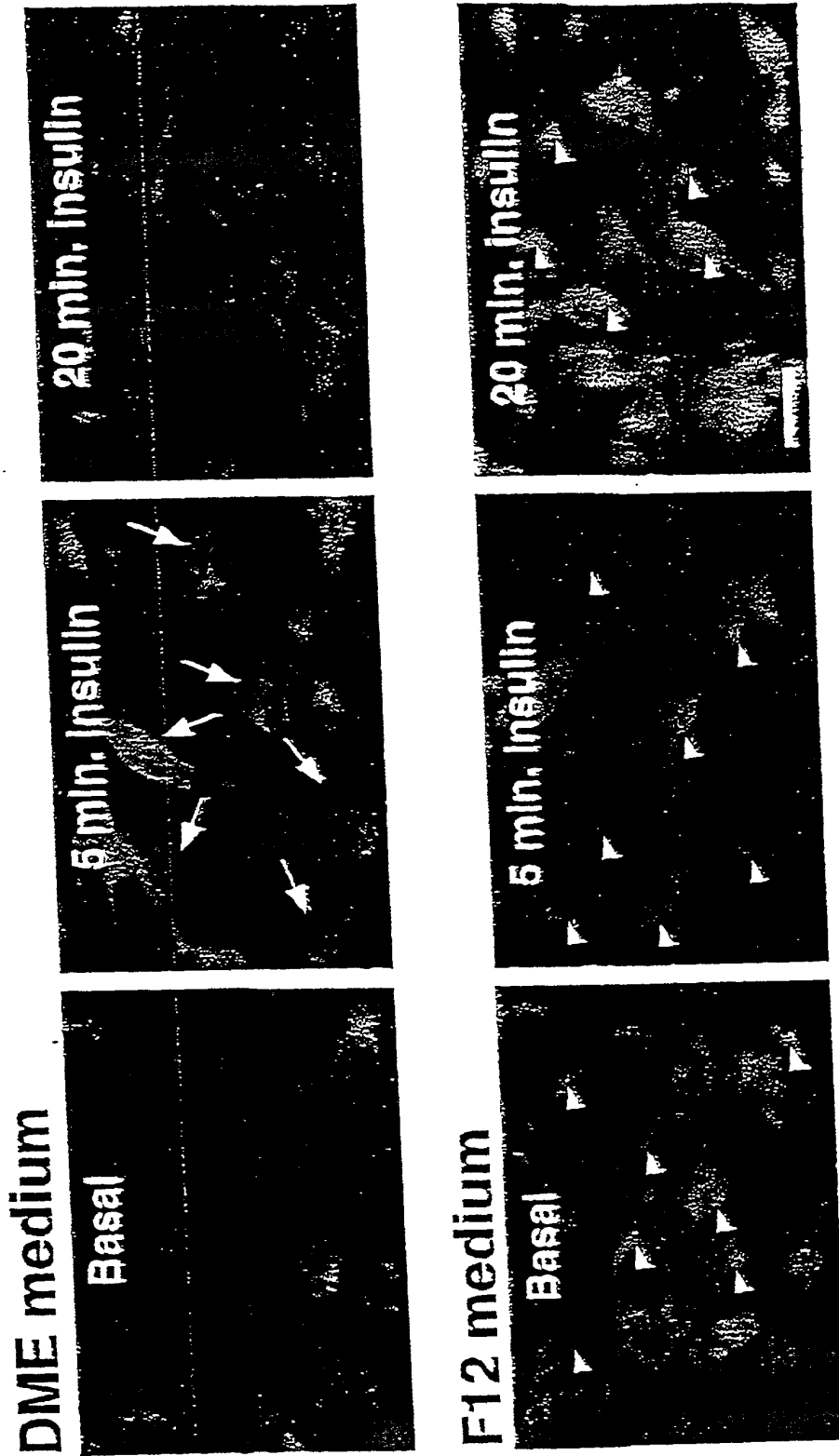


Figure 21

Figure 22A

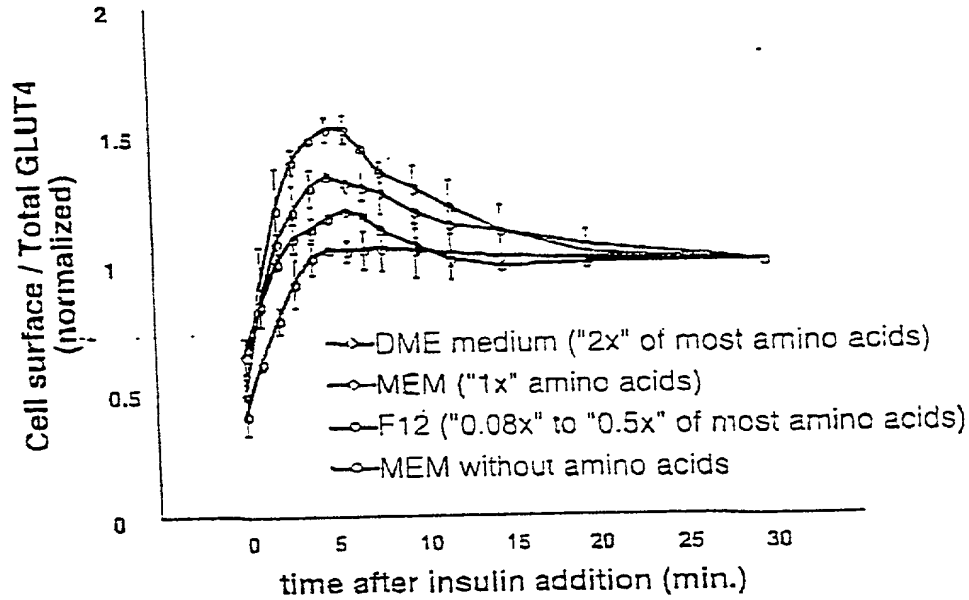
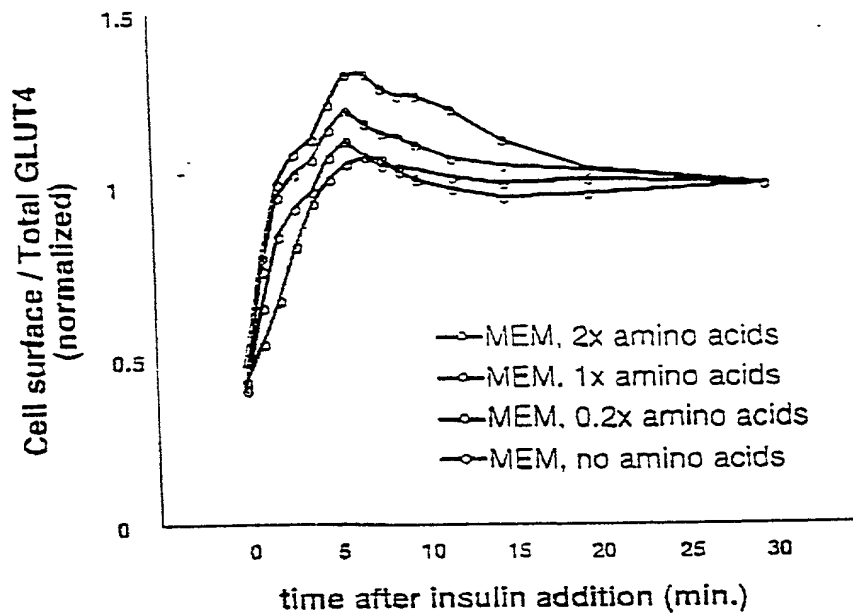


Figure 22B



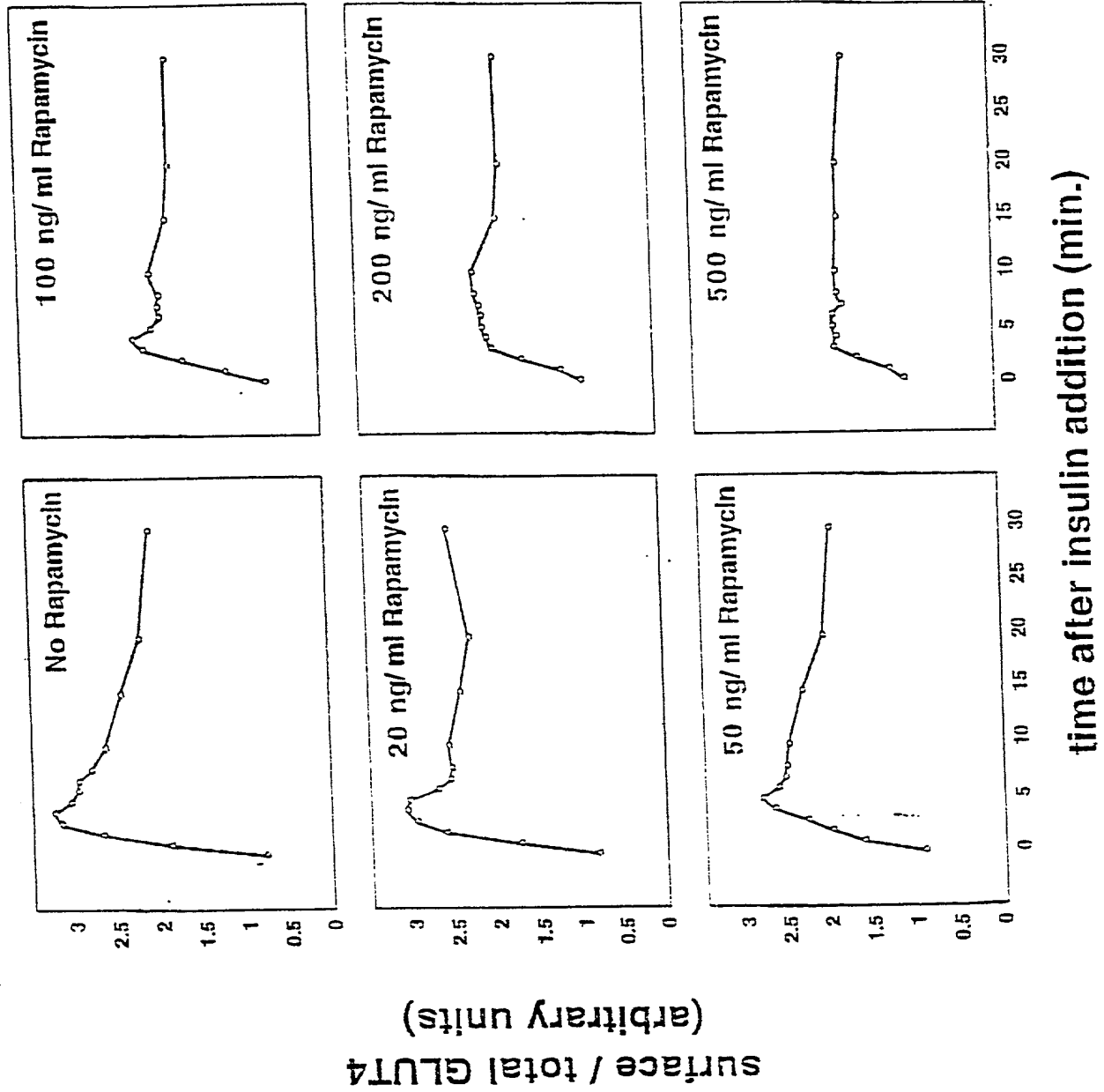
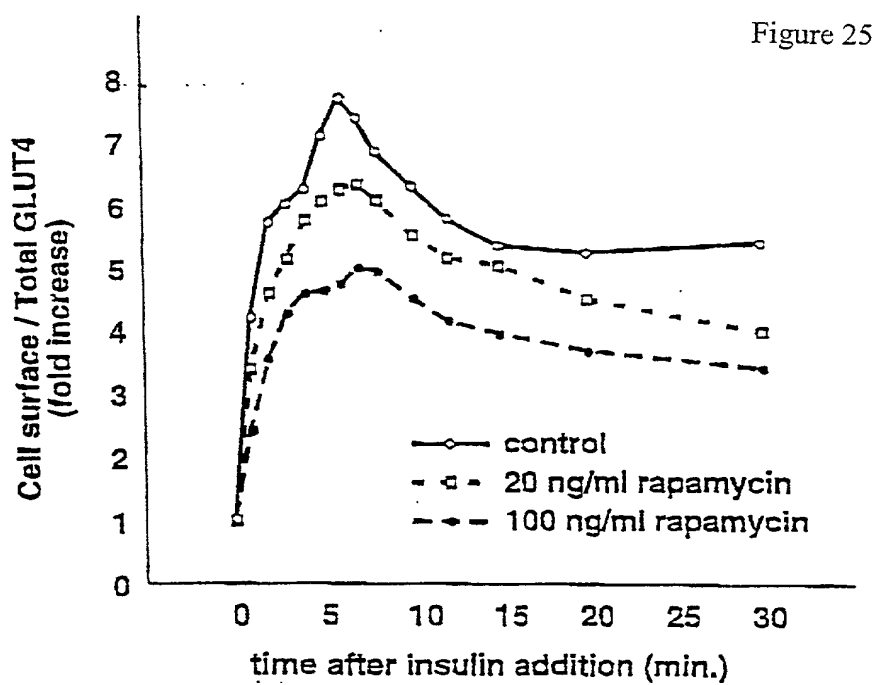
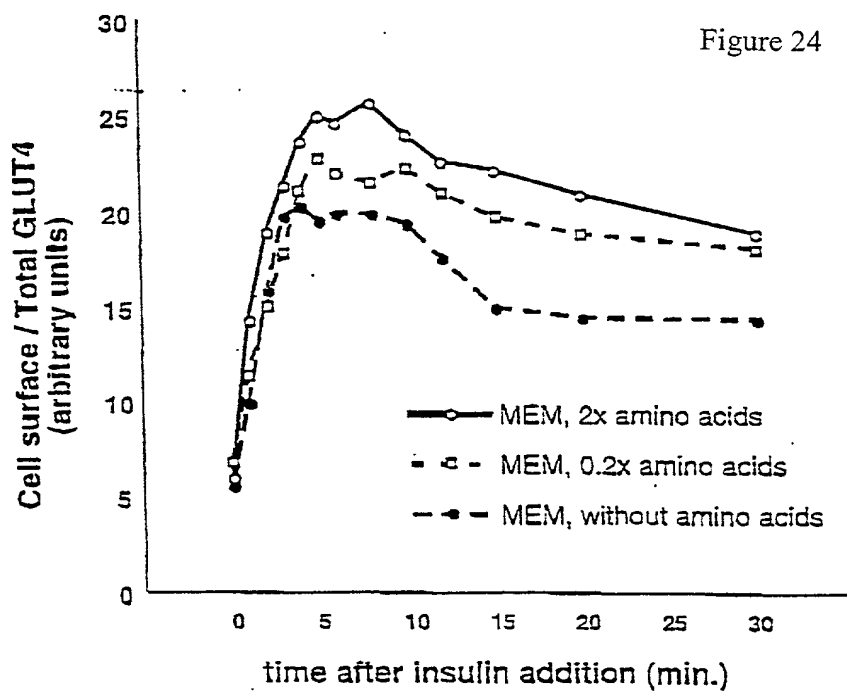


Figure 23





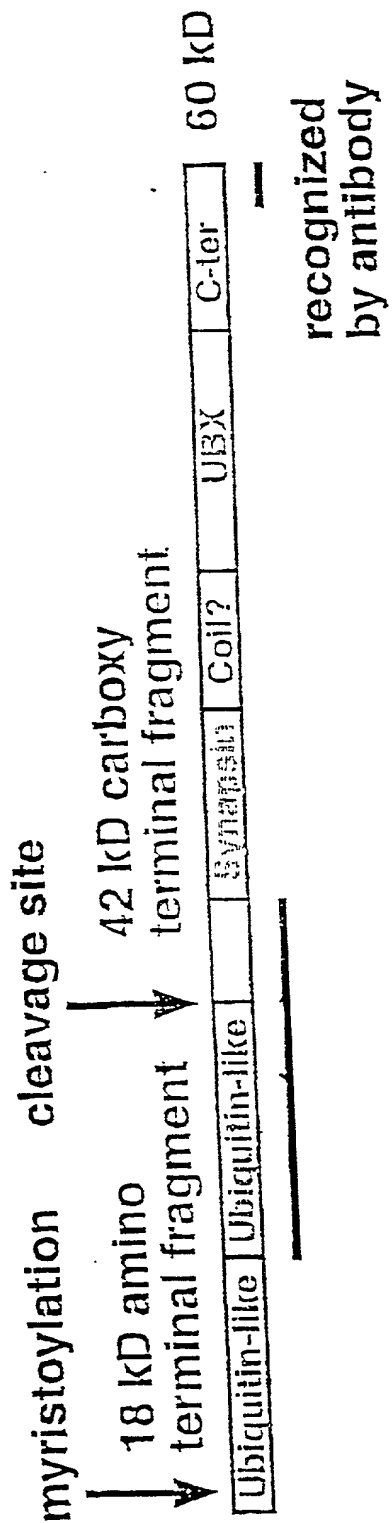


Figure 26

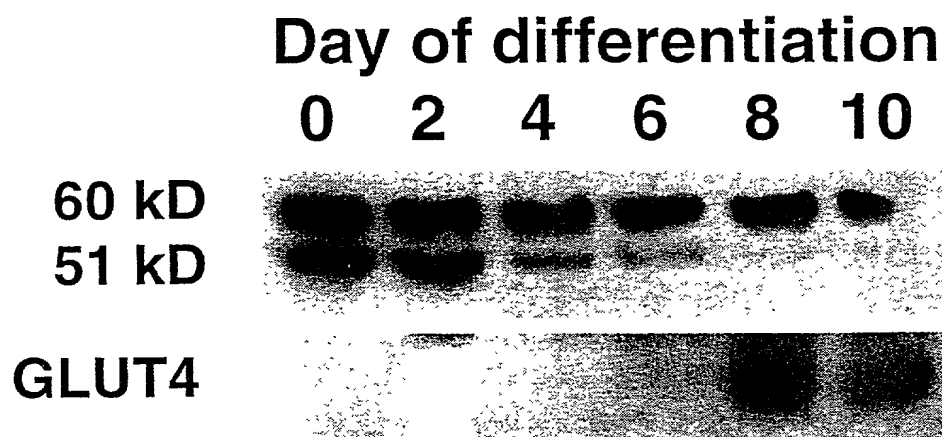


Figure 27

20251002885001

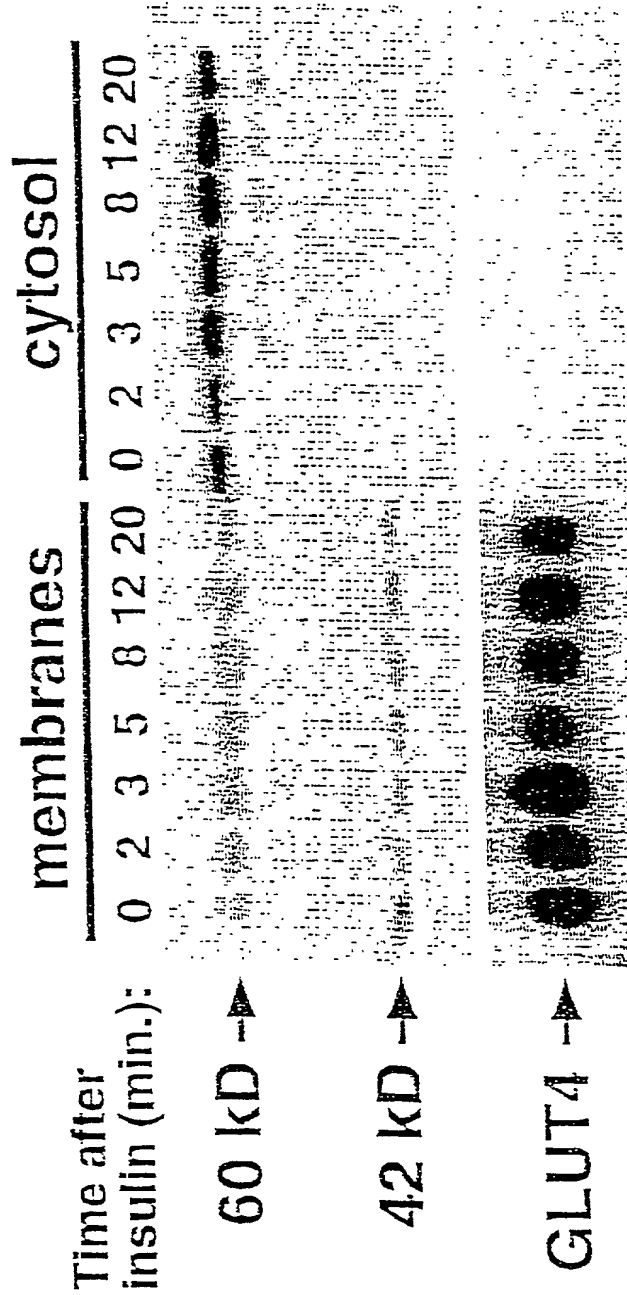


Figure 28

208270-0293501

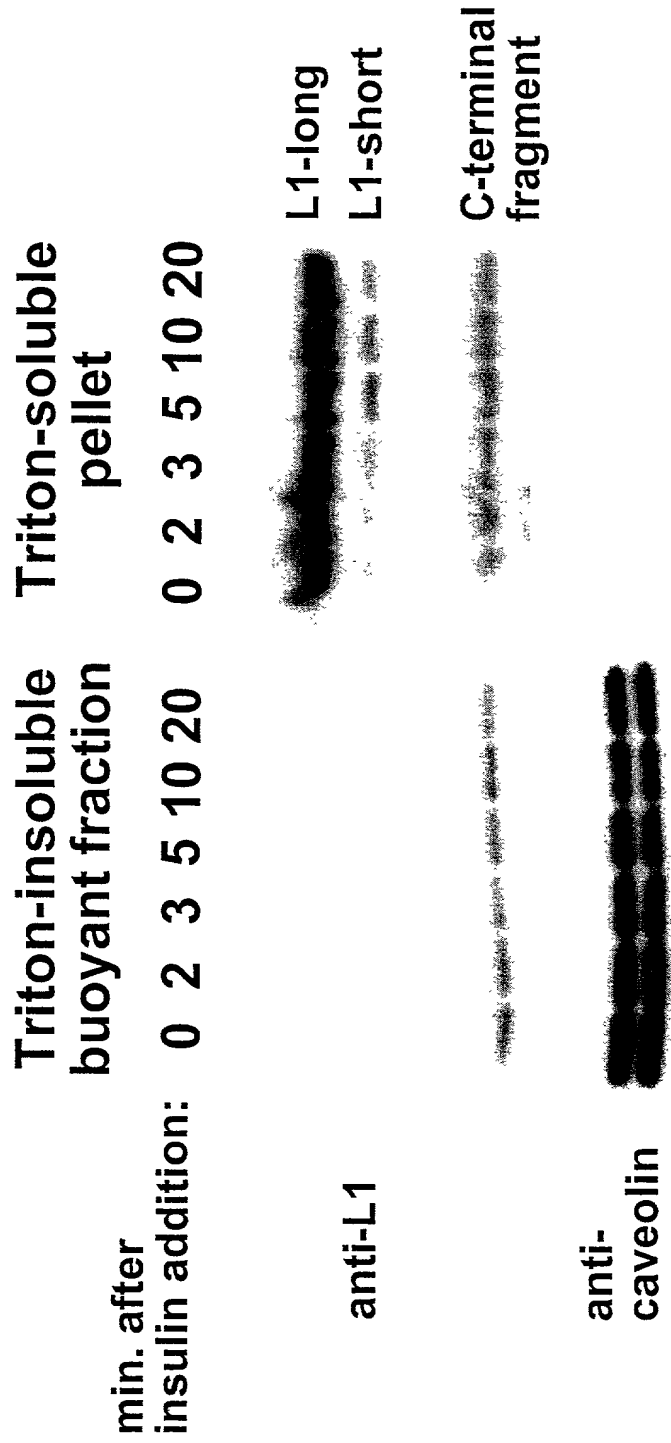


Figure 29

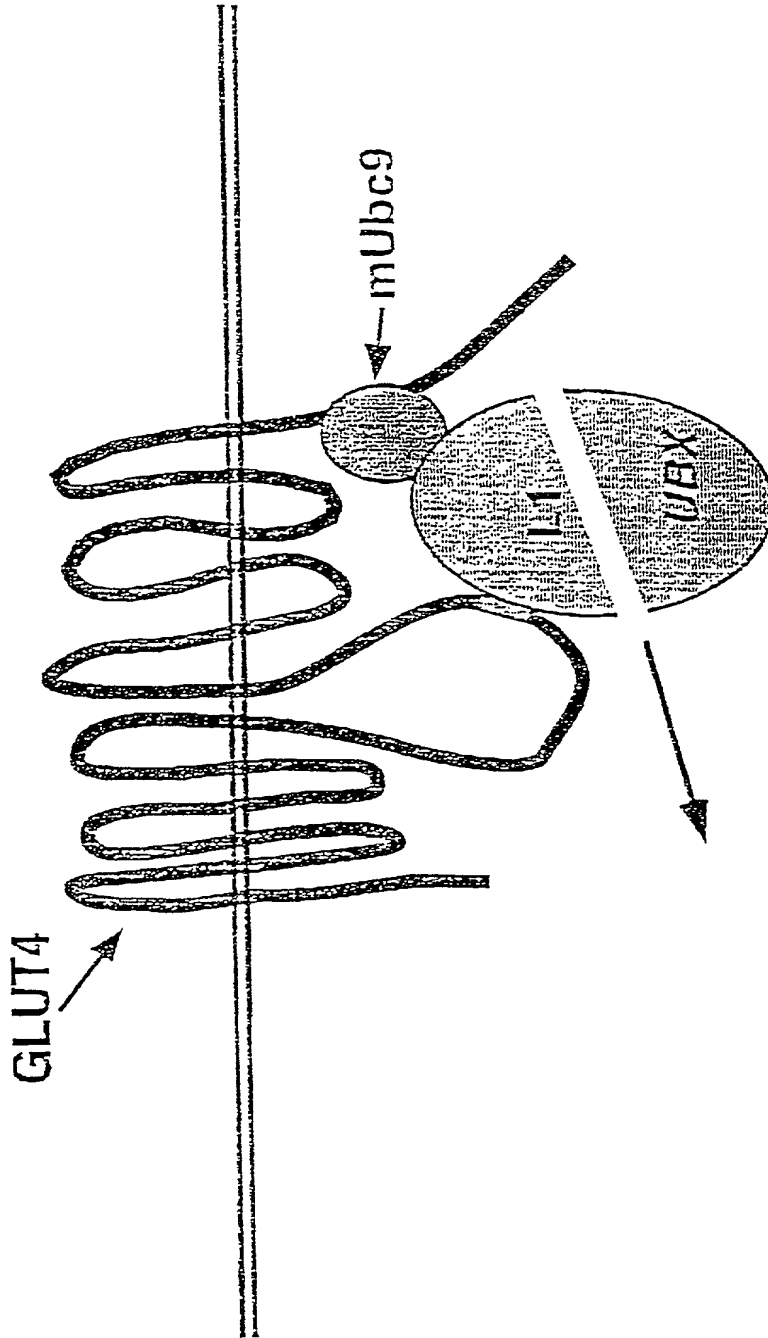


Figure 30

208270-02395001

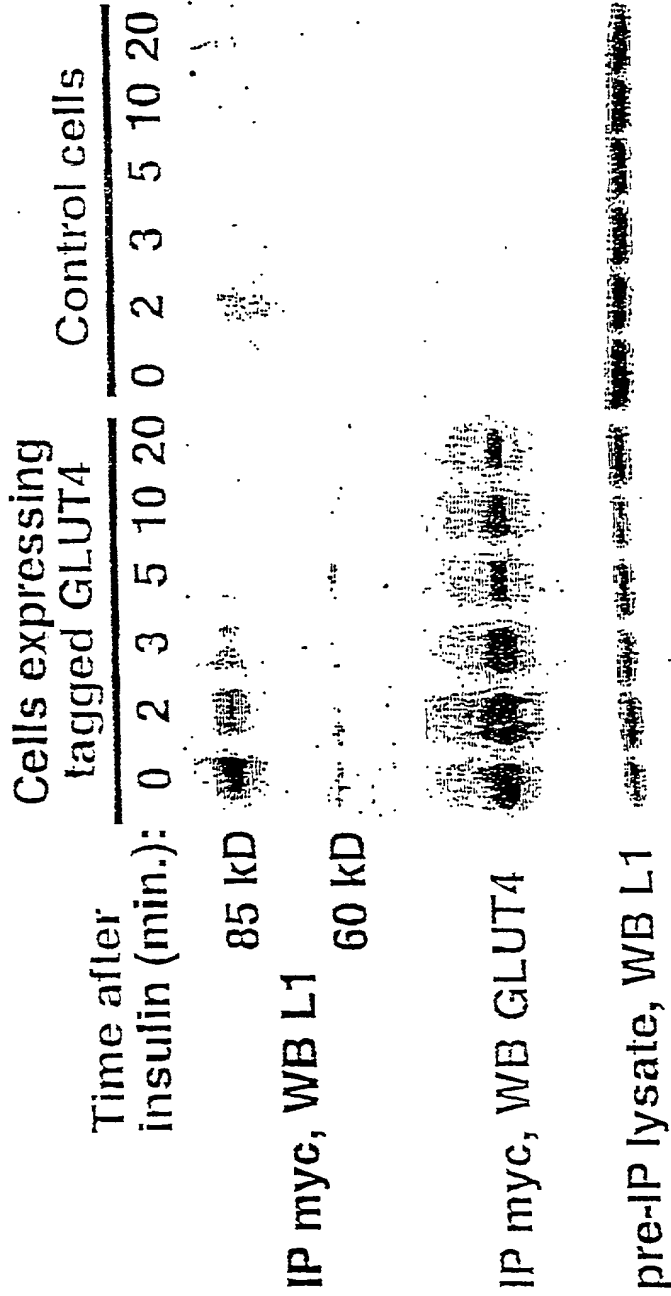


Figure 31

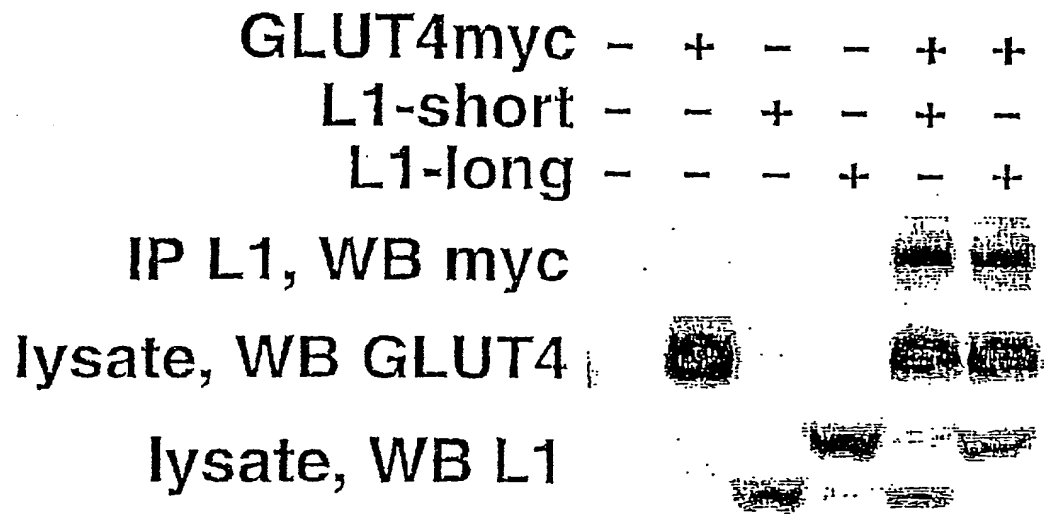


Figure 32

2025.04.23.000000

2025-01-02 02:28:50

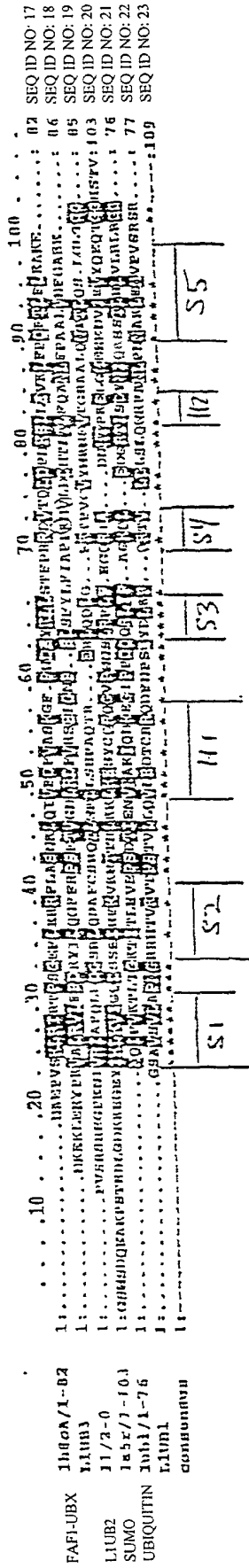
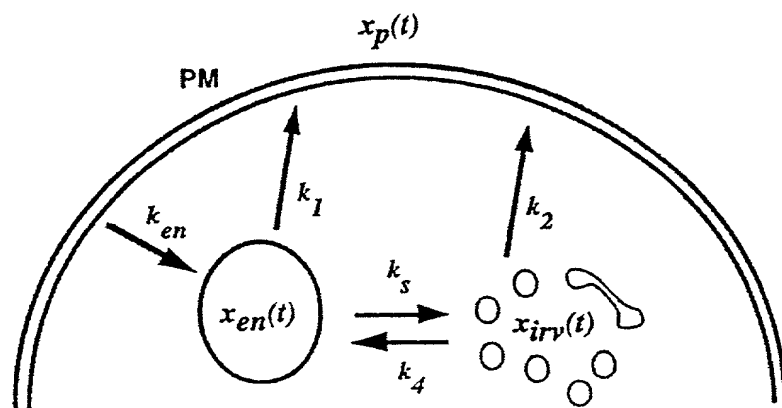


Figure 33





$$dx_p(t)/dt = -k_{en}x_p(t) + k_1x_{en}(t) + k_2x_{irv}(t)$$

$$dx_{en}(t)/dt = k_{en}x_p(t) - k_1x_{en}(t) - k_sx_{en}(t) + k_4x_{irv}(t)$$

$$dx_{irv}(t)/dt = k_sx_{en}(t) - k_4x_{irv}(t) - k_2x_{irv}(t)$$

$$x_p(t) + x_{en}(t) + x_{irv}(t) = 1$$

Figure 34

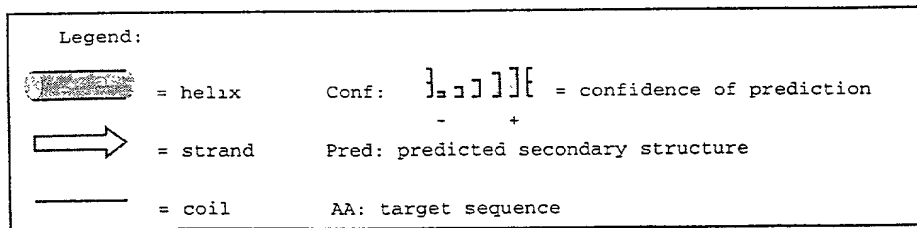


Figure 35

2025-02-08

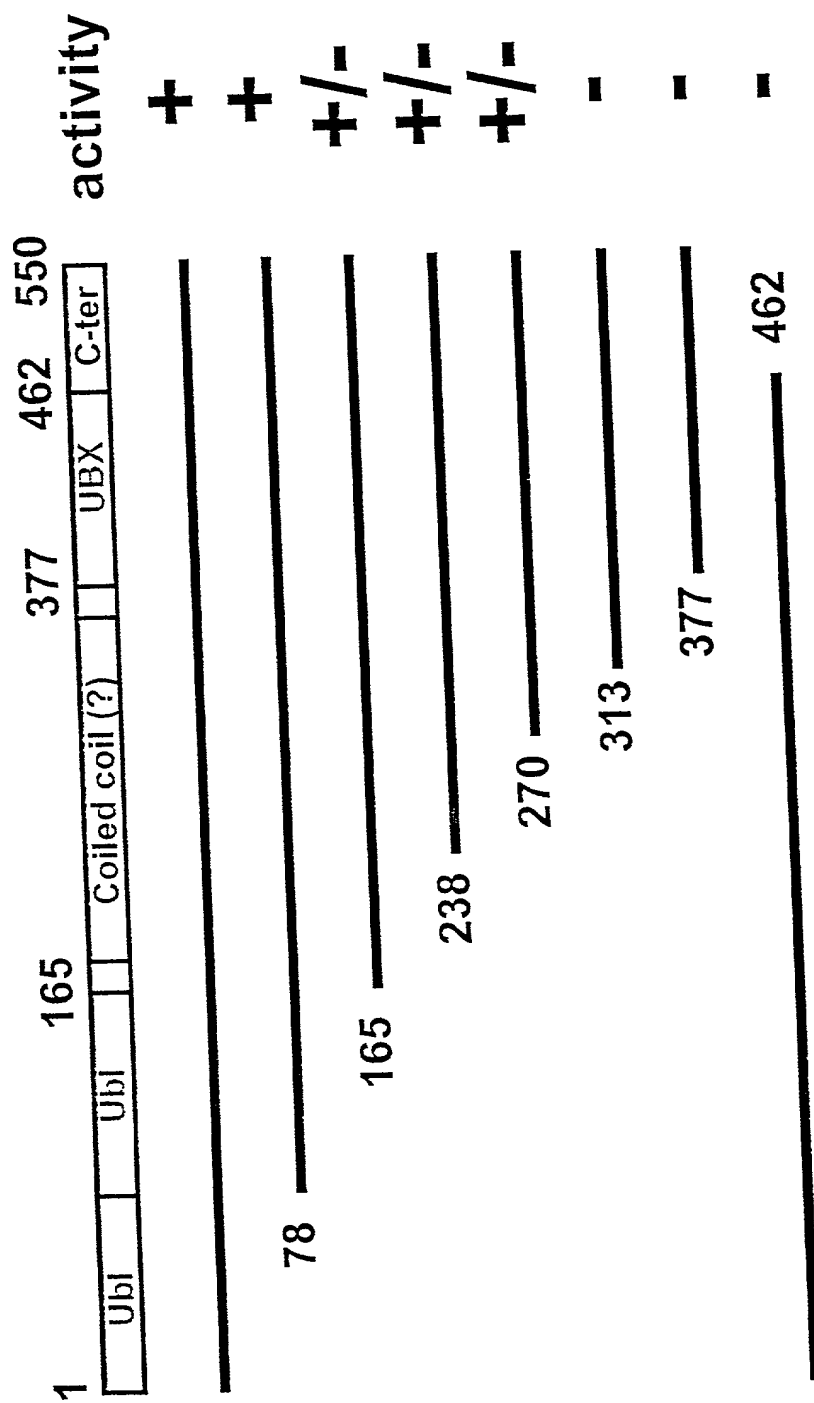


Figure 36